

Jekelius (Jekelius) pucholti nov. sp., a new species from Spain (Coleoptera: Geotrupidae: Geotrupinae)

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Abstract: *Jekelius (Jekelius) pucholti* nov. sp. is described from Spain. Differences with the nearest species are discussed. *Jekelius (Jekelius) pucholti* nov. sp. looks very close to *Jekelius (Jekelius) hernandezi* (López-Colón, 1988) and *Jekelius (Jekelius) verdui* Kylies, Pucholt, López-Colón & Bahillo de la Puebla, 2025, although these three species are clearly distinguished by the male's protibia and the aedeagus.

Key words: Coleoptera, Geotrupidae, *Jekelius (Jekelius) pucholti* nov. sp., description, taxonomy, distribution, Spain.

Resumen: *Jekelius (Jekelius) pucholti* nov. sp., nueva especie de España (Coleoptera: Geotrupidae: Geotrupinae). Se describe *Jekelius (Jekelius) pucholti* nov. sp. de España. Se discuten las diferencias con las especies próximas. *Jekelius (Jekelius) pucholti* nov. sp. es próximo a *Jekelius (Jekelius) hernandezi* (López-Colón, 1988) y *Jekelius (Jekelius) verdui* Kylies, Pucholt, López-Colón & Bahillo de la Puebla, 2025, aunque estas tres especies se distinguen claramente por la protibia del macho y el edeago.

Palabras clave: Coleoptera, Geotrupidae, *Jekelius (Jekelius) pucholti* nov. sp., descripción, taxonomía, distribución, España.

Recibido: 3 de marzo de 2026
Aceptado: 17 de marzo de 2026

Publicado on-line: 1 de abril de 2026
urn:lsid:zoobank.org:pub:B81ACCC7-AA55-4E12-B693-8FF510426CC0

Introduction

The genus *Jekelius* López-Colón, 1989 comprises 30 species with a circum-Mediterranean distribution, although one taxon reaches Asia Minor (BARAUD, 1992; LÓPEZ-COLÓN, 1992, 1996, 2000, 2003, 2004; LÓPEZ-COLÓN & BAHILLO DE LA PUEBLA, 2023, 2024a, b; SOMMER et al., 2025; KYLIES et al., 2025a, b). It is divided into three subgenera: *Jekelius sensu stricto*, *Rudolfpetrovitzia* Rey & López-Colón, 2003 and *Reitterius* López-Colón, 1996. The 19 Ibero-Balearic species belong to the subgenus *Jekelius*, being all of them convex, medium-sized, black with more or less weak lateral metallic tones, which in some cases extends to the elytra and pronotum, and disappearing in others completely; among them, *Jekelius balearicus* (López-Colón, 1984) is exclusive to the Balearic Islands, and *Jekelius intermedius* (Costa, 1839), also reaches these islands, but not the Iberian Peninsula despite its wide Mediterranean distribution (BARAUD, 1992; LÓPEZ-COLÓN & ROMERO SAMPER, 1996; LÓPEZ-COLÓN, 2000, 2003, 2004; NIKOLAJEV et al., 2016; HUCHET et al., 2020; LÓPEZ-COLÓN & BAHILLO DE LA PUEBLA, 2023, 2024a, b; KYLIES et al., 2025a, b).

The Ibero-Balearic *Jekelius* are characterized externally by their clypeus always semicircular, not flattened at the front; upper edge of the mandible straight and entire; elytral stippling fine or very fine, scarce, more or less aligned in striations; apical tooth of male's anterior tibia bifurcated; and posterior edge of the metafemora entire.

Material and methods

To obtain the images that accompany this paper, serial photographs were taken at different focus planes using a Meopta laboratory microscope and a CMOS 5 digital camera. The photographs were subsequently stacked with Helicon Focus 8.2 software.

The material studied has been collected in Landete (Cuenca, Spain) and labelled as follows:

- **Holotypus:** 1 ♂, White label: Spain, 19-25-III-2024 / Landete env. 980 m. / Kylies, Pucholt lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla ♂, Holotypus. The specimen is kept in the collection of Entomology of Museo Nacional de Ciencias Naturales (Madrid).
- **Allotypus:** 1 ♀, White label: Spain, 19-25-III-2024 / Landete env. 980 m. / Kylies, Pucholt lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla ♀, Allotypus. The specimen is kept in the collection of Entomology of Museo Nacional de Ciencias Naturales (Madrid).
- **Paratypi:** 75 ♂♂ and 100 ♀♀. The specimens are kept in the collection of Petr Kylies & Pavel Pucholt (72 ♂♂ and 98 ♀♀), Museo Nacional de Ciencias Naturales (Madrid) (2 ♂♂ and 1 ♀) and Pablo Bahillo de la Puebla (1 ♂ and 1 ♀)
 - 38 ♂♂ and 44 ♀♀, White label: Spain, 19-25-III-2024 / Landete env. 980 m. / Petr Kylies lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla, Paratypus.
 - 3 ♂♂ and 2 ♀♀, White label: Spain, 19-25-III-2024 / Landete env. 980 m. / Kylies, Pucholt lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla, Paratypus.
 - 12 ♂♂ and 26 ♀♀, White label: Spain, 19-25-III-2024 / Landete env. 980 m. / Pavel Pucholt lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla, Paratypus.
 - 22 ♂♂ and 28 ♀♀, White label: Spain, 6-12-IV-2025 / Landete env. 980 m. / Petr Kylies lgt./ Red label: *Jekelius pucholti* Kylies, López-Colón & Bahillo de la Puebla, Paratypus.

Description

Jekelius (Jekelius) pucholti nov. sp.

Holotypus

Total length: 16,1 mm. Convex and broad, black in colour, shiny, without bluish lateral reflections (Figs. 1-4). Cephalic tubercle conical, weak and low elevated; clypeus densely dotted; prominent cheeks; upper edge of mandibles not sinuate (Figs. 5-7). First segment of antenna very thick in lateral view, especially in males (Fig. 8).

Pronotum convex, with a slightly median depression on the anterior margin; anterior angle obtuse, posterior angle rounded; base with interrupted ridge on each side of the middle; very dense, double punctation all over its surface, in both males and females (Figs. 9-12).

Triangular scutellum, one and a half time as wide as long, without punctation (Figs. 13-14, 19).

Elytra fused, with fairly marked, aligned punctation; interstries paired on the disk; anterior angle sunken, concave (Figs. 13-14, 19).

Mesosternal process evident, but not elevated, rounded (Figs. 15-16).

Mesosternum ♂ (Fig. 15), compared to mesosternum ♀ (Fig. 16).

Abdominal sternites punctated, with a lot of hairiness (Figs. 17-18).

Brachypterous. Wings reduced, 2.0 mm long (Fig. 20).

Pro- and mesofemora with unarmed anterior and posterior margins. Unarmed metafemora, without denticulation on the posterior margin but with a well-defined straight carina. All of them have a slightly marked, hairy, dotted posterior line.

Protibiae with the apical tooth bifurcated in the male; the third external tooth thickened inwards; the ventral surface concave, with a very weak but clearly visible keel, very close to the line of tubercles of the inner ridge. The denticulation of the lower inner ridge shows a stronger tooth aligned with the base of the second external tooth; there is also another one, much smaller in the basal half (Figs. 21-22: 2 images of the initial part).

Metatibiae as in Fig. 23.

Aedeagus: Length: 3.85 mm. Very characteristic, with the desclerotizations of both parameres large, well developed. The dorsal basal arch irregular, thickened on the right side and narrow in the center and left side. The phallobase with a median triangular concavity evident on the superior surface (Fig. 24).

Allotypus

Female. Total length: 16,1 mm. Similar to the male, but with the anterior tibiae of a different shape. Anterior tibiae with a simple, non-bifurcated apical tooth; the third external tooth in the same plane as the others, not thickened; the ventral surface is completely unarmed, concave, while the denticulation of the lower internal ridge also has a series of teeth, some relatively large (Fig. 22: 2 images of the final part).

Variation of the length

Total length of Paratypes: ♂♂: 13,0-16,5 mm; ♀♀: 13,0-17,0 mm.

Etimology / Derivatio nominis

Dedicated to the Czech entomologist Ing. Pavel Pucholt, a colleague of the first author, who collected with him the first specimens back in 2024.

Discussion

The closest species to *Jekelius (Jekelius) pucholti* nov. sp. are *Jekelius (Jekelius) hernandezi* (López-Colón, 1988) and *Jekelius (Jekelius) verdui* Kyllies, Pucholt, López-Colón & Bahillo de la Puebla, 2025 although these species are clearly distinguished by the anterior male's tibia and the aedeagus. These three species belong to the "intermedius" group with the following characteristics:

- Male's protibiae with the third external tooth thickened and directed downwards in a different plane than the others.
- Male's protibiae with a very weak ventral keel applied towards the denticles of the lower-internal margin.
- Abdominal setae denser.
- Anterior angles of the pronotum obtuse.
- Aedeagus with the dorsal basal arch not thickened in the middle.

However, *Jekelius (Jekelius) pucholti* nov. sp. is distinguished from other species by several characteristics. The main ones are the conformation of the aedeagus and the male's protibiae, but also by the antenna with the first segment very thick in lateral view, especially in males; metafemora without denticulation on the posterior margin but with a well-defined straight carina and wide as well as morphology of brachypterous wings.

Acknowledgements

We thank Dr. L. Mencl (Masarykovo náměstí 5, Týnec nad Labem) for taking all the photographs that illustrate this paper.

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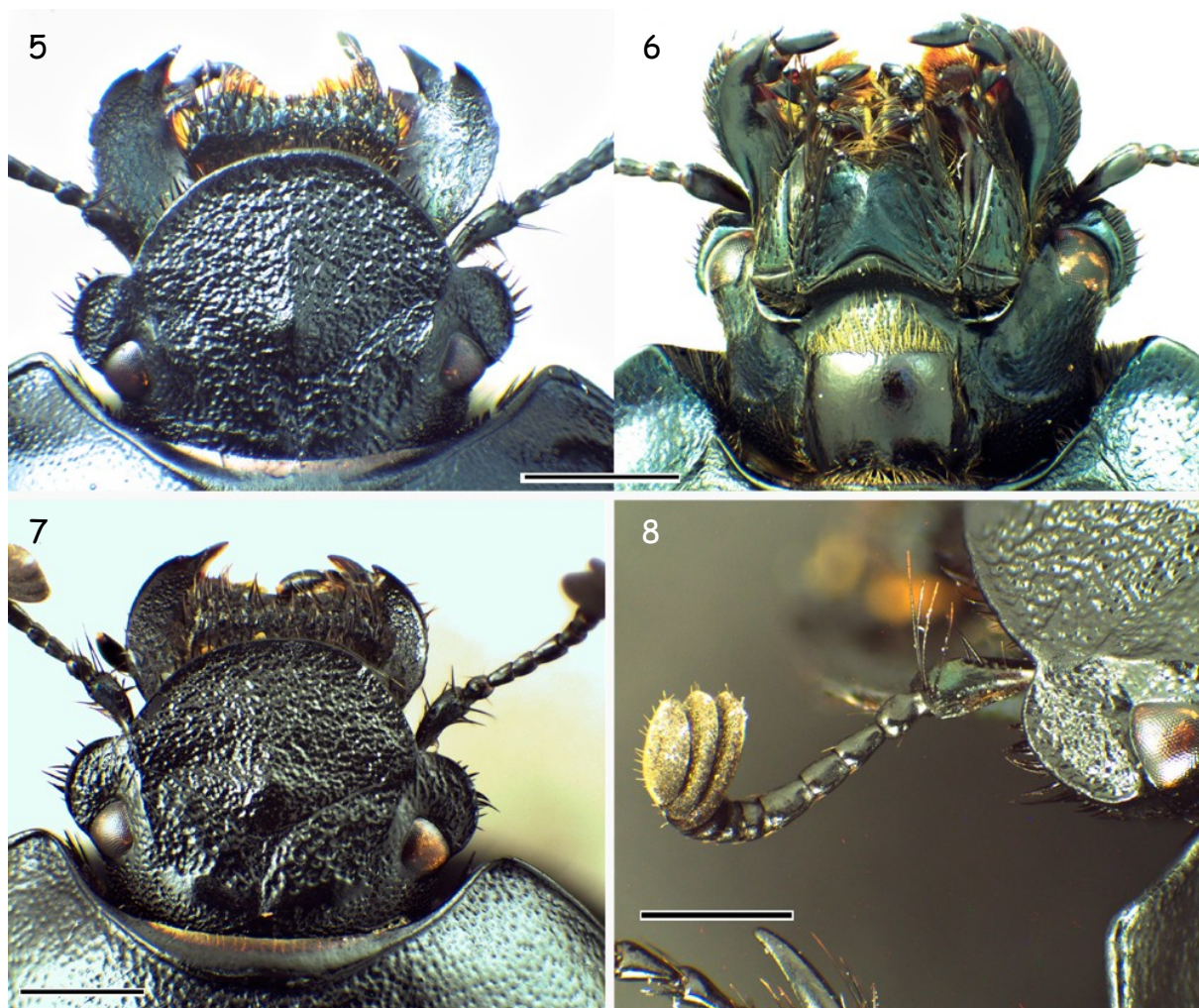
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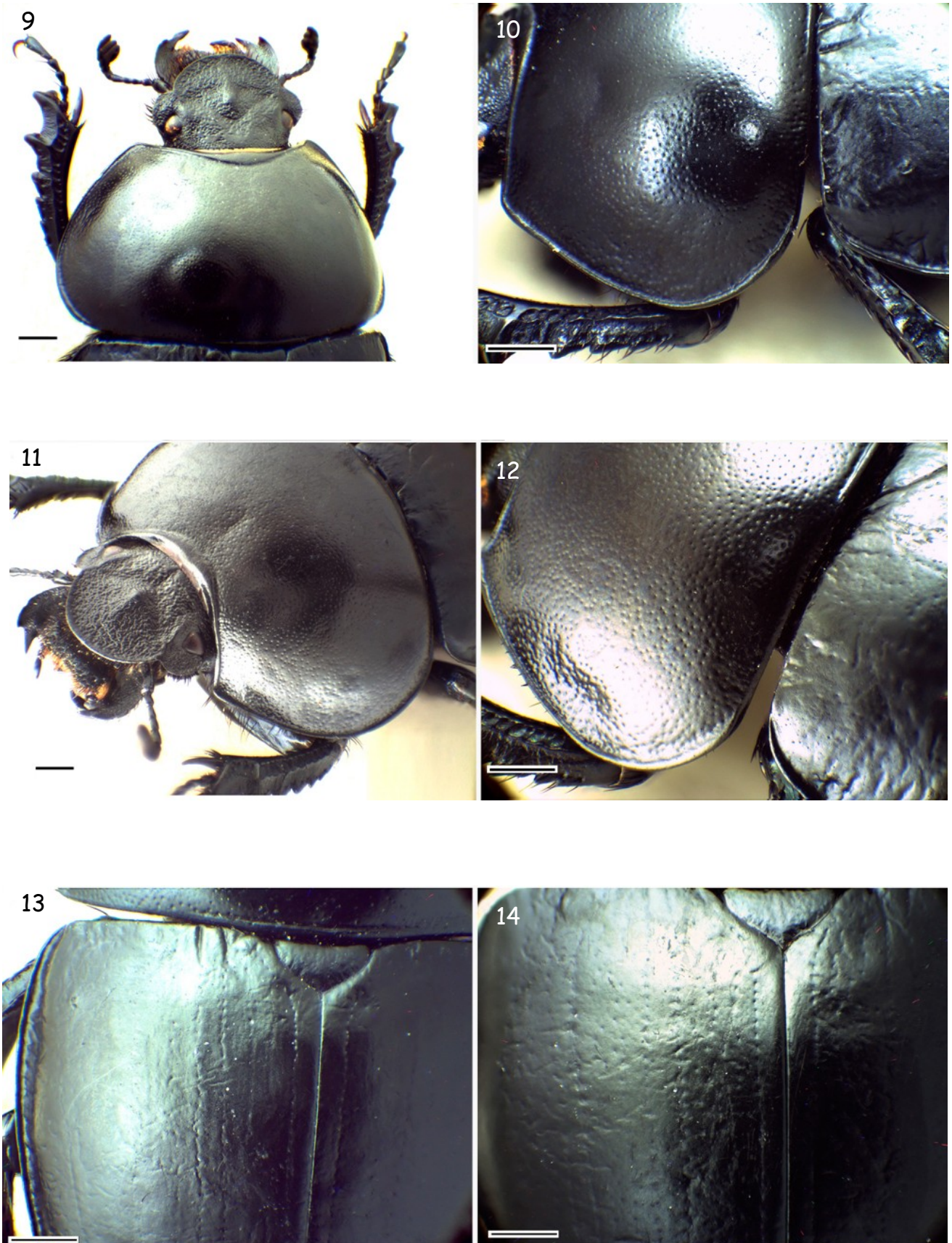
Figs. 1-2. - Habitus of *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 5 mm). **1.** - Male (dorsal view). **2.** - Male (lateral view).



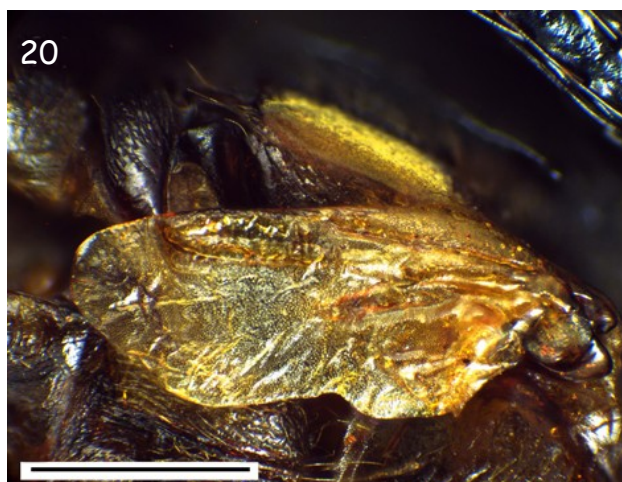
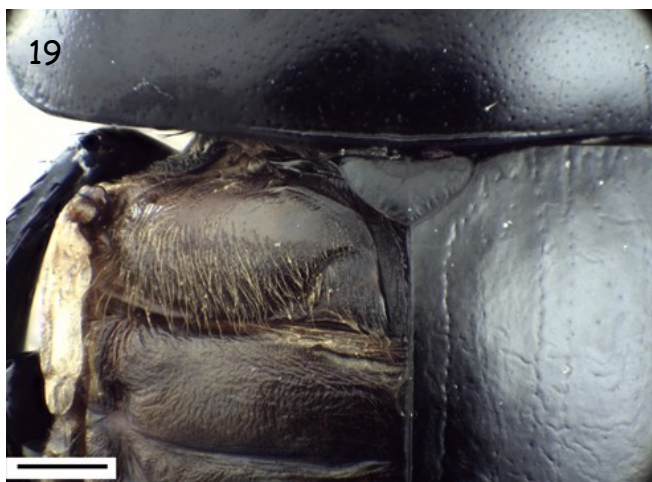
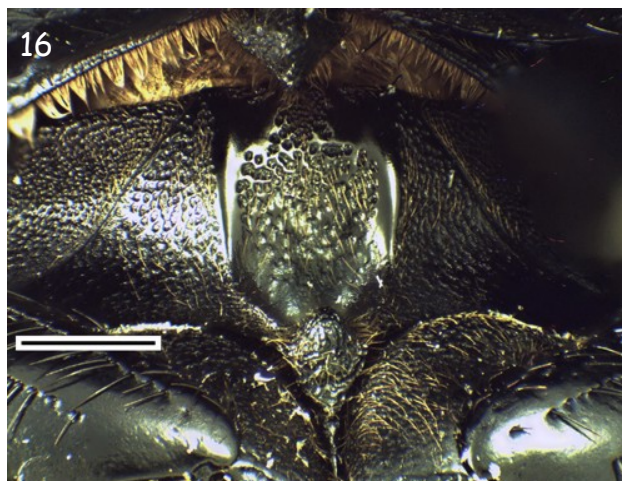
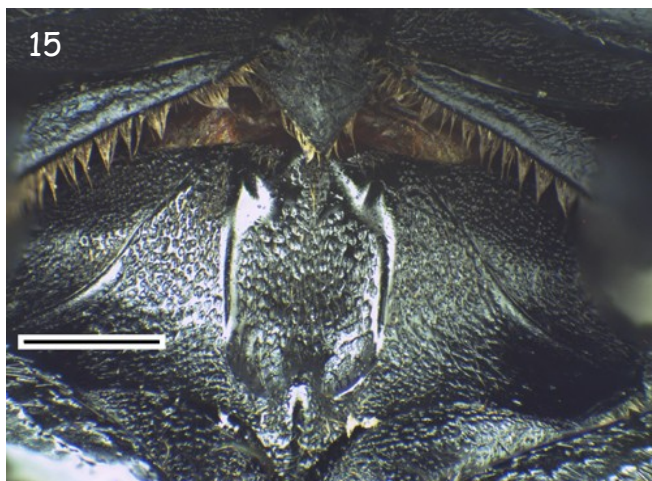
Figs. 3-4. - Habitus of *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 5 mm). 3. - Male (ventral view). 4. - Female (ventral view).



Figs. 5-8. - *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 1 mm). 5. - Head, male (dorsal view). 6. - Head, male (ventral view). 7. - Head, female (dorsal view). 8. - Antenna, male.



Figs. 9-14. - *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 1 mm). **9.** - Pronotum, male (dorsal view). **10.** - Pronotum, male (dorso-lateral view). **11.** - Pronotum, male (front-dorsal view). **12.** - Pronotum, female (dorso-lateral view). **13.** - Elytrae, male. **14.** - Elytrae, female.



Figs. 15–20. – *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 1 mm). 15. – Mesosternum, male. 16. – Mesosternum, female. 17. – Abdomen, male. 18. – Abdomen, female. 19. – Insertion of the left metathoracic wing, male (dorsal view, without left elytrae). 20. – Metathoracic wing.



Figs. 21-23. - *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 1 mm). **21a.** - Protibia, male (dorsal view). **21b.** - Protibia, male (ventral view). **21c.** - Protibia, male (lateral view). **22a.** - Protibia, female (dorsal view). **22b.** - Protibia, female (ventral view). **23.** - Metatibia and metatarsus, male (dorsal view).



Fig. 24.- *Jekelius (Jekelius) pucholti* n. sp., various paratypes (scales: 1 mm). 24a.- Aedeagus (dorsal view). 24b.- Aedeagus (ventral view). 24c.- Aedeagus (lateral views).

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Spain, 19.-25.3. 2024
Landete env., 980 m
Kylies, Pucholt lgt.,

Jekelius ♂
pucholti Kylies,
López-Colón &
Bz hillo de la Puebla
- HOLOTYPE -

Fig. 25.- *Jekelius (Jekelius) pucholti* n. sp. Original labels (Holotypus).